ORIGINAL ARTICLE

A SYSTEMATIC REVIEW ON COMPLEMENTARY APPROACH FOR DEPRESSION AMONG ADULT PRISON INMATES

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ABSTRACT

Prisoners tend to be marginalized and deprived of the rights and privileges that others may enjoy, this make them susceptible to depression. Extensive research have been carried out on treatment of depression, however a review is essential to determine the evidence based complementary approach for examining depression among prisoners. Thus, the objective of this paper is to evaluate the effectiveness of the complementary approach to reduce depressive symptoms among adult prison inmates. Literature on the randomized control trial of complementary approach on depression published between 2012 and June 2017 was searched using various keywords. Literature resources were mainly from PubMed, EBSCOhost, Science Direct, and Wiley Online Library. The inclusion criteria were English full text, adult prison inmates with a diagnosis of depression, while the exclusion criteria include diagnostic instruments or other pharmacological trials. A total 158 studies were identified and after eliminating 21 duplicates, there were 137 articles to review. 22 studies have met the criteria for full-text review, however, some papers were excluded due to valid reasons, and only five studies were eligible for final review. Yoga, music therapy and cognitive bibliotherapy have showed potential to be used as complementary approaches for reducing depressive symptoms. However, the approach of 'seeking safety', which is a short-term behavioural intervention, was found to have an insignificant effect. Meanwhile, Beck Depression Inventory were most commonly used study instrument for measurement of outcome. Future research is needed to account for the varying modes of depression intervention which includes pharmacology trial or other study design.

Keywords: Systematic review, Complementary, Depression, Adult, Prison, Inmates.

INTRODUCTION

Prison, also known as a correctional facility is an institution for confinement and punishment of persons convicted to crimes[1]. It helps reform criminals into law-abiding citizens, thus reduce recidivism[2]. However, it has been reported that imprisonment also increases vulnerabilities and worsens mental health problems[2].

A systematic review conducted among 33,588 inmates worldwide in 24 countries reported the prevalence of major depression was 10% and 14% among male and female prisoners, respectively[3]. The high rates of depression have created concerns on treatment capacities as untreated depression are risk factors for a range of adverse outcomes including self-harm[4], suicide[5], violence[6] and recidivism[7]. This highlights the need for effective depression treatment. In this light, the treatment for depression is often multi-dimensional and can be divided into pharmacotherapy, psychotherapy, somatic therapy as well as other complementary and alternative treatments. There are few systematic reviews on the mental health treatment for prisoners published but there are limited studies done to review the treatment of depression.

A review on treatment of common depression among adults in Malaysia has identified only two general approaches, pharmacotherapy and psychotherapy, that are used to treat depression in the country and there is no readily available complementary treatment[8]. There are also limited studies on the use of complementary treatment for treating depression among inmates. Complementary medicine covers a broad range of approaches, including various philosophies of healing and many types of therapies that is used as a complement to the mainstream medical care[9]. Common complementary approaches for depression include acupuncture, aromatherapy, herbal medicine, homeopathy, massage, meditation, yoga and others[10]. Thus, it is essential to determine evidence-based complementary treatment that can be integrated into the inmate's depression care and management. This review was undertaken to evaluate the effectiveness of

complementary approach to reduce depressive symptoms among adult prisoner.

METHODS

Search strategy

An inclusive search of literature was conducted to recognise pertinent studies on this issue. Electronic database were used to recognize relevant articles through a search of EBSCOhost medical collections (MEDLINE and CINAHL), PubMed, Science Direct and Wiley Online Library. In addition to that, targeted hand search of relevant reference and citation list were undertaken using other searches like PsyINFO, Google Scholar and available local journals in Malaysia.

The database searches take into account the following combination of search terms to capture the target population: 'inmate' OR 'prisoner' OR 'detainee' OR 'incarcerated'. Symptoms of depression terms included: 'depress' OR 'depression' OR 'mood disorder' OR 'psychological distress'. Meanwhile, the intervention search terms comprised of 'psychological interventions' OR 'psychosocial interventions' OR 'cognitive behavioural therapy' OR 'therapy' OR 'counselling' OR 'treatment' OR 'intervention' OR 'rehabilitation' OR 'relaxation' OR 'mindfulness' OR 'visual imagery' OR 'randomized control trial'. Medical Subject Headings (MeSH) terms and free text words were used as they are appropriate to the databases. These keywords were chosen based on the foremost findings of the articles gathered earlier.

Selection criteria

The inclusion criteria for studies were refined to full texts in English which were published between 2012 and June 2017, and meet participant, intervention, comparator and outcome (PICO) criteria. Participants incorporated were adult inmates aged 18 years and above, from of sexes with a diagnosis of depression, and treated for symptoms of depression by complementary method. Here, "inmates" are classified as any individual detained in a secure correctional institution secondary to criminal activity or convicted by the court, here, inmates do not include a persons in police custody or other forms of administrative detention. The diagnosis of depression was based on International Classification of Diseases ICD-10[11] or the Diagnostic and Statistical Manual of Mental Disorders DSM-IV[12], or using a validated standardized questionnaire. This review is limited to randomized controlled trials (RCT), as it is recognized that RCT provide the highest quality of evidence compared to other study designs[13]. This includes RCT targeted at inmates with depression which report the relationship between baseline variables and treatment outcomes during imprisonment. Studies that were not focused in depression or using pharmacology treatment as intervention were excluded. In the meantime, the comparator includes study that compares complementary treatment with treatment as usual (TAU) or wait list group or other psychology treatment. TAU for depression refers to the usual psychotherapy, pharmacotherapy, or combined treatment.

Study outcome refers to reports of change or improvement in depression score as measured by standardised instruments at post-treatment and follow-up were included as well. A study will be excluded from the systematic review if it is connected to diagnostic instruments, clinical and pharmacological trial and other study designs (non-RCT, systematic review, or case reports).

Screening and data abstraction

The search was performed electronically according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement[14]. The article citations were organized, downloaded and reviewed by using the EndNOTE database. The articles were mainly retrieved from online database of University Putra Malaysia library. The title, author, journal and year of publication were then screened for their title and abstract review.

Two reviewers have screened titles and abstracts for eligibility independently. Any uncertainty pertaining to each study's eligibility based on the abstracts or the full texts was resolved by conducting a series of discussions between the reviewers. Duplicate articles were recognized by comparing author names and title of study. In this review, the information extracted from the studies include authors' name, year of publication and the country of study. Furthermore, each study's sample size, type and intensity of intervention, duration, care received by comparator group and outcome results were considered. In this light, the outcome results should be comparable from the initial period and post intervention while p less than 0.05 is considered as significant.

Data synthesis

The results were synthesised and complied into a logic framework but no meta-analysis was computed owing to diversity in the interventions and outcomes measures. The logic framework shows the various results obtained, which were classified accordingly to types of intervention. For this study, the authors were not contacted for extra information. Moreover, the risk of bias across studies was kept minimum as the articles were not selected based on the origin of the studies or their journal impact factor.

RESULTS

As shown in Figure 1.0, the database search has identified 155 studies while 3 through other sources. After excluding 21 duplicates, there were

137 articles reviewed but only 22 met the criteria for full text review. After the full review, only five studies were eligible to be included in the literature review as summarized in Table 1.

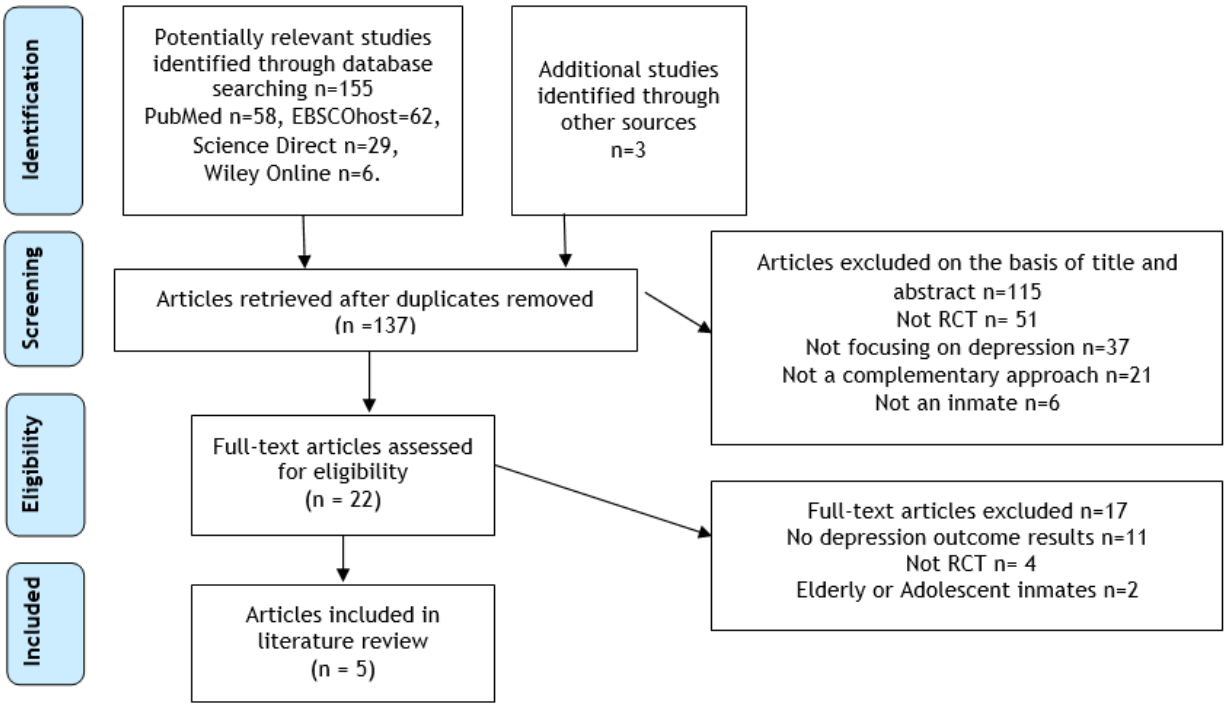

Figure 1: Flowchart of literature search.

Study locations

The studies were conducted in four different countries namely United Kingdom[15] (yoga), Norway[16] (music therapy), United States of America[17,19] (congnitve bibliotherapy, seeking safety) and China[19] (music therapy).

Types of interventions, sample size and control group

There were two studies that focused on group music therapy[16,18] as inteventions for depression, while others focused yoga[15] bibliotherapy[17] and seeking safety[19].Three interventions were group based[16,18,19] howewer, the number of participants allocated to intervention group (IG) and control group (CG) varied according to sample size. Three studies[16,18,19] had almost similar allocation of IG and CG respondents while other studies which are based on yoga[15] and bibliotherapy[17] did not. In relation to the control group, all of the studies reported that the control group received usual standard care[15,16,18,19] , except for the study in cognitive bibliotherapy program[17] where the CG had to wait for four weeks before receiving the treatment.

Duration of intervention and interval evaluation

Duration of intervention differ according to type of intervention. The shortest intervention was bibliotherapy for 4 weeks[17] while longest was seeking safety for 16 weeks[19]. Three studies, one on yoga[15] and two on muscic therapy[16,18] conducted 10 weeks of intervention. All the studies evaluate the intervention interval three times, at the baseline (Time 1), mid-test (Time 2) and post-test (Time 3), except for the study on yoga[15] that only had two interval assessments at baseline and after intervention.

Measurement of outcomes and delivery

The instrument used to measure the outcome result varied across the study. Frequently used instrument is the Beck Depression Inventory which was used in two studies[17,18] , while others used BSI[15], HADS[16], and CES-D[19]. The interventions for depression were delivered by experts in the field except for cognitive bibliotherapy program which were self-administered[17]. The music therapy interventions in both studies were delivered by music therapist[16,18], the yoga therapy was conducted by trained teacher for yoga[15], and certified seeking safety facilitator conducted the sessions for group seeking safety[19].

Table 1: Summary of review on complementary intervention for depression among adult prison inmates

Author/Year/ Country	Sample size	Type of intervention	Intervention method, duration, delivery and comparator group	Measurement of outcome and interval	Outcome results
Bilderbeck et al.[15] 2013 United Kingdom	100	Yoga	Method: Intervention group (IG) (n=45) received ten weeks yoga program held once a week with a two hour duration. Duration: ten weeks. Delivery: trained teacher Control group (CG) (n=55): usual care	The Brief Symptom Inventory (BSI) at baseline and after intervention ten weeks.	Yoga participants showed a significant decrease in psychological distress $F(1,38) = 7.78$, $p = 0.008$ from pre- to post-intervention compared to those in the control group. Effect size was not mentioned.
Gold et al.[16] 2014 Norway	113	Group music therapy	Method: IG (n=56) received group music therapy two to three times a week. Duration: ten weeks Delivery: music therapist CG (n=57): usual care	Hospital Anxiety and Depression Scale (HADS) at baseline and every two weeks in IG, and after one, three, and six months in CG.	Music therapy was accepted, however there were no improvement among patients with depression post intervention, with $p>0.5$. Effect size was not mentioned.
Pardini et al.[17] 2014 United States of America	37	Cognitive bibliotherapy	Method: IG (n=20) received four weeks bibliotherapy program. Duration: four weeks. Delivery: self-administered. CG (n=17): delayed treatment, which were asked to wait four weeks before beginning treatment.	Beck Depression Inventory (BDI) at baseline, post treatment (four weeks later), and one month follow up for IG. CG at baseline, pretreatment (four weeks later), and post treatment	Bibliotherapy was more effective for the treatment of depressive symptoms compared to delayed treatment control group with $p<0.05$.
Chen et al.[18] 2016 China	200	Group music therapy	Method: IG (n = 100) received group music therapy for 20 sessions, twice weekly. Each session lasted for 90 minutes. Duration: ten weeks Delivery: music therapist CG (n = 100): usual care.	BDI at baseline, mid-test (five weeks) and post-test (ten weeks)	Compared to standard care, depression among the IG decreased significantly both at mid-test ($p<0.001$, effect size of $d=0.54$) and post-test ($p<0.001$, effect size of $d=0.87$)
Tripodi et al.[19] 2017 United States of America	40	Group seeking safety	Method: IG(n=20) received seeking safety in group format which consist of 25 modules, twice a week for 90 mins. Duration: 16 weeks. Delivery: certified seeking safety facilitator. CG (n=20): usual care.	Center for Epidemiology Studies Depression Scale (CES-D) posttest and four months after intervention	There was significant difference in pretest depression scores between the treatment group ($M=27.67$, $SD=10.75$) and the control group ($M=35.78$, $SD=11.32$). The depression scores of both groups have improved from pretest to posttest and from pretest to follow-up. However, the differences in the CES-D score were not significant at 4-month follow-up $F(2,1)=4.03$, $p=.055$, partial $\eta^2 = .13$

Outcome results

The outcome results for complementary RCT intervention in this review showed mixed results. Three studies reported improvement in depression between control group and intervention group after the intervention. Yoga[15], group music therapy[18], cognitive bibliotherapy[17] were found to be effective. However, another study on group music therapy Gold et al. (2014) reported no improvement in depression post intervention[16]. Group seeking safety[19] showed an improvement in depression score form pre-test till follow up but statistical analysis showed that the IG did not show any significant improvement at four months follow-up.

DISCUSSION

Study locations

The complementary study trials for treatment of depression among adult prison inmates were conducted in different countries. In this regard, the types of intervention and outcomes may have been partially influenced by geographical, socio-demographic characteristics and cultural background of the inmates. This is supported by a study conducted in United States of America (USA) prison that reported that psycho-cultural culture can be one of the factors that explains treatment disparities among the inmates[20].

Types of interventions, sample size and control group

The types of complementary intervention in this review varied based on the study objective and experts involved in the study. Three studies used group based interventions, while the other two were individual. The existing literature has not yet established which intervention is more effective in treating depression[21]. Certain studies proposed individual treatment to be more effective[22] while others did not[23]. However, author Cuijpers et al. (2008) reported that individual interventions could be more effective than group interventions for interventions that are conducted in less than one month[21]. Meanwhile, the sample size of these studies vary from 37 to 200 inmates. Often times, the sample size depend on the effect size of intervention , however, at some cases, the size was beyond the researcher's control as the size could be fixed by prison authority due to security, safety and ethical issue. In addition, the most common intervention is group music therapy due to the fact that music therapy is effective in treating depression[24].

Duration of intervention and interval evaluation

There are differences in the duration of intervention, follow up and interval evaluation. Few factors influence this, including post-treatment follow up and institutional factor. Post treatment follow up factors include difficulties faced in providing post-treatment follow up[25], high rates of inmate release[26], rapid turnover of prisoners[27], short duration of stay[16], and difficulties in ensuring continuity of care[28]. Meanwhile, prison institutional factors take into account inmate infractions that restricted enrolment into treatment programs[29] and high attrition rates[30]. Most of the RCTs involved short-term intervention with an average length of 10 weeks. This might be due to the fact that providing short term non-pharmacology intervention can be effective[31]. Most studies conducted their evaluation three times; at the baseline level, follow up level and evaluation level. This ensures that the researchers have taken necessary steps to overcome possible obstacles in prison institute secondary to structural factors which includes scheduling follow ups for patients and scheduling treatments[31].

Measurement of outcomes and delivery

Different instrument were used to measure of outcomes of intervention in this review. Most studies have used BDI to measure depression. This contributed to fact that BDI is most used self-rating scales world-wide for measuring depression[32]. Additionally it has high reliability, better correlation, and easy to understand to accommodate respondents[33]. All of the interventions were delivered by experts in that particular field except for cognitive bibliotherapy[17] which is a form of self-administered treatment in which structured materials used to alleviate distress. Meanwhile, intervention by an expert would be an added advantage as it reduces bias and maintains good quality of intervention.

Outcome results

Prisoners practising yoga has been reported to have lower rate of depression compared to inmates who continued doing their normal prison routine. Although yoga is considered as a multifaceted and complex intervention, it has been recognized to be an effective method of reducing depression, especially among vulnerable individuals[34]. In this regard, in an eight week yoga randomized control trial intervention among adults with mild-to-moderate major depression in San Francisco, researchers have found statistically and clinically significant reductions in the severity of depression among the participants[35]. American Psychiatric Association has proposed that one of the mechanism by which yoga reduces depression is through the process of rumination. Rumination is tendency to repetitively think and focus on negative feelings and thoughts, which is linked with the onset of depression. The meditative feature of yoga is thought to give people an alternative motivation that will reduce their rumination, and directly, reduce the level of depression[36].

A study in the USA suggested that cognitive bibliotherapy is effective for jail inmates that are

depressed. Author Gregory et al. (2004) defined bibliotherapy as a therapy that involves the reading of specific texts with the purpose of healing and help lessen depression[37]. Bibliotherapy, which mostly uses cognitive behaviour therapy (CBT) principles, are designed to deliver patients with means for restructuring key cognitive processes that causes depression[37].Similarly, cognitive bibliotherapy was found to an effective treatment for mild depressive symptoms among young adults in a randomized control trial study in Romania as reported by author Moldovan et al. (2013)[38].

There were two accounts of group music therapy; one was effective while the other was not. A study by author Chen et al. (2016) in China reported significant decrease of IG and CG depression score during mid-test and post-test[18]. Studies have reported that music therapy is able to reduce mental health problems as it has both neurological and psychological influences on mental care improvement[39,40]. However, a study in Norway by author Gold et al. (2014) reported that participants' condition showed no improvement post intervention[16]. This was possibly due to missing data as some inmates have a very short stay in the prison which leads to the lack of follow-up intervention[16].

Seeking safety is a short-term behavioural intervention that simultaneously addresses substance abuse, trauma, as well as mental health issues, including depression[41]. Studies on group seeking safety[18] showed mixed results as there were improvements of the depression score initially but it was not significant after four months of intervention. This might be due to the differences between the groups at pre-test and the small sample size[18].

Limitation

This review should be interpreted with caution as there are several limitations. First this review is based on a small number of studies as many others were filtered out during the study selection phase. Second, this review has only included English full texts, hence, there is a selection bias here. However, we do believe that this systematic review contributes to the literature by identifying the effective complementary treatment for treating depression among adult prison inmates.

CONCLUSIONS

This review suggests that the use complementary therapies, particularly yoga, group music therapy, and bibliotherapy, could improve depression score better than usual care. Thus, such treatments should be introduced among prison populations as it has lesser side effect compared to pharmacology treatment. It is recommended that further research should look into other modes of depression intervention which includes pharmacology trial or other study design.

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DECLARATION

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